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ABSTRACT

This paper identifies and discusses salient historical events and trends that have led to the increased importance of scholarly faculty research and the concomitant decline in importance given to undergraduate teaching in many institutions of higher education in the United States. Following the English model, early colleges in the seventeenth and eighteenth centuries emphasized religious orthodoxy for college faculty and undergraduate instruction. By the 1750s the sciences began to be included in the college curriculum and their influence increased throughout the nineteenth century. The increasing importance of graduate education abroad, usually in Germany, led to the pivotal founding of Johns Hopkins University, which led the nation in incorporating the German ideal that scholars should advance knowledge and practice intellectual creativity. Thus, the established practice of studying science was merged with a new emphasis on advancing science at the graduate level. A third major influence on the overall trend toward research and away from teaching was the advent of governmental support for research following World War II. The paper concludes that the real conflict is not between research and teaching but in the fact that research is more important than teaching to the professor's own career. (Contains 15 references.) (DB)

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The Reduced Emphasis of Teaching Undergraduates: A Historical Perspective

by

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INTRODUCTION

Gilman (1906) writes that in 1873 there existed limited opportunities for graduate study in this country because the professors were primarily concerned with undergraduate teaching. Pusey (1978), describing the university atmosphere of the modern period, states that advances made in graduate education "tended to lessen faculty concern for undergraduate education . . ." (p. 85). What events of the past century have contributed to this change in the professorial emphasis on undergraduate teaching? This paper will present some of the salient events that have transpired throughout the history of the United States that have ultimately caused scholarly research to overshadow collegiate teaching in many institutions of higher learning.

MODERN SITUATION

Today's professor who is engaged in research may be busied with a variety of tasks: project consultant, project referee, journal editor, independent investigator, project director, author (Barzun, 1968). Barzun writes:

> In that guise he and his peers constitute the chief asset and heaviest burden of the new university, the prevailing belief being that research is the great justification of the whole enterprise. . . . Only research makes science progress. . . . *New* is the keynote. (p. 20)

He further states that a specified amount of teaching is not enforceable for a tenured professor and that "the modern assumption is that a professorship confers the right of self-direction in teaching as in research, and one hears that right frequently cited as the essence of *academic freedom* [italics added]" (p. 20).

Therefore, the real dilemma is not that research is intrinsically more important than teaching but that the professor has a limited amount of time and energy available for both (Jencks & Riesman, 1968). Jencks and Riesman posit that because professional standing and growth are dependent on research more so than teaching, investing the available time into research is the more sensible approach for the professor. However, the ideal situation would be to marry the two pursuits which

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is "precisely what the present system fails to do. . . . Teaching is often adjusted to the exigencies of research, but research is almost never shaped by the experience of teaching" (Jencks & Riesman, p. 533). Volpe (1968) writes that a research program that does not contribute to both undergraduate and graduate education should not exist in a university. However, the reality is that research demands do exist at universities and do affect undergraduate teaching (Jencks & Riesman, 1968; Pusey, 1978). But is this problem a logical outgrowth of the mere existence of science in college curriculums or is it related to the concepts of *new* and *academic freedom* that represent both the results and the supportive milieu of creativity?

EARLY AMERICAN HIGHER EDUCATION AND THE ADVENT OF SCIENCE IN THE CURRICULUM

The seventeenth and eighteenth centuries of American higher education were ruled by strict religious orthodoxy (Brubacher & Rudy, 1976). Brubacher and Rudy write:

> No one thought of raising the methodological question whether, right or wrong, learned men were entitled to reason independently to their own conclusions. . . . The tradition of orthodoxy or conformity to dominant modes of thought in the American community long held the college campus securely in its grasp. (p. 309)

A consequence of this orthodox grip led to the resignation of Harvard's first president, Henry Dunster, in the seventeenth century and Yale's president Cutler a century later (Brubacher & Rudy). In the eighteenth century, religious tests were required to hold office at both Yale and William and Mary; additionally, Princeton's trustees carefully scrutinized each faculty member's publications and lectures for compliance to orthodox views (Brubacher & Rudy). But this prevailing emphasis on religion does not indicate that this period was completely devoid of scientific investigations.

Cotton Mather and Zabdiel Boylston, both early eighteenth century Americans, published their empirical research on small pox inoculations in the Royal Society of London (Long, 1991). Benjamin Franklin was awarded the Royal Society's Copely Medal in recognition of his research in electricity and by 1753 was generally acknowledged as the "greatest electrical mind of the age" (Long, p. 46). While these scientists did not perform their research as professors, scientific work was beginning to develop in the collegiate environment. John Winthrop, Harvard's professor of mathematics and natural philosophy, established the first American laboratory of physics in 1746 in which he conducted numerous experimental lectures (Cremin, 1970). During the same time period, William Small added scientific investigations at William and Mary, Thomas Clap implemented the use of various scientific apparatuses in the courses at Yale, and experimental demonstrations were also part of the curriculum of Princeton (Cremin). Cremin asserts, "by the 1750's, it was fairly well established that . . . the sciences would occupy a significant place in the collegiate curriculum" (p. 511).

In fact, the presence of the sciences in curriculums would increase even further. By 1850, Francis Wayland recommended that the collegiate curriculum of Brown University should include mechanics, optics, chemistry, physiology, geology, principles of agriculture, and applications of chemistry and science to the arts (Wayland, 1850). Thus, scientific studies did exist prior to 1873 when Gilman (1906) wrote that "teachers were for the most part absorbed with undergraduate instruction . . ." (p. 600). This indicates that the presence of science in education alone did not reduce the priority of teaching undergraduate students.

BEGINNINGS OF AMERICAN GRADUATE EDUCATION

James Morgan Hart (1874) wrote:

> The university instruction of Germany does not attempt to train successful practical men, unless it be indirectly, by giving its students a profound insight into the principles of the science, and then turning them adrift to deduce the practice as well as they can from the carefully inculcated theory. Its chief task, that to which all its energies are directed, is the development of great thinkers, men who will extend the boundaries of knowledge. (p. 577)

Beginning with Edward Everett, the first American to earn a Ph.D. (he did so at Germany's University of Gottingen in 1817), ten thousand young Americans were enticed "by reports of an exciting new kind of higher education" (Pusey, 1978, pp. 47-48) and went abroad, mainly to Germany, for advanced instruction (Pusey). German universities were labeled as model institutions because of their completeness as evidenced by providing pertinent materials of learning and the presence of eminent professors of science in all educational disciplines (Tappan, 1851). However, these eminent professors were not driven by practical concerns but rather profound technical learning (Sutton, 1884).

Charles W. Eliot wrote in 1869 that "the practical end should never be lost sight of by student or teacher in a polytechnic school, and it should very seldom be thought of or alluded to in a college" (p. 635); preoccupation with practical applications could stifle the creative process. G. Stanley Hall (1923) stressed, ". . . intellectual creativeness must be made the real standard and test of any system of higher education of to-day [sic]. Anything and everything must be subordinated to this . . ." (p. 650). Thus, the unrestricted collegiate environment of creative thinking, also known as academic freedom, originated in Germany (Marsden, 1994).

Pusey (1978) writes that the pivotal point in incorporating the ideal of advancing knowledge rather than merely transmitting already known principles was the founding of The Johns Hopkins University in 1876. The creation of this institution marked the beginning of the process of transforming American colleges into universities (Pusey). In the era of its beginning, The Johns Hopkins University was the leader in incorporating the German ideal of intellectual creativeness (Hall, 1923).

Thus, the study of science during the late nineteenth century was not new to American colleges but advancing science was a new objective. The requisite for the furthering of science was an environment in which professors could be creative in thought without practical considerations. This idea of academic freedom immigrated to the United States via American students who were attracted to Germany to study under eminent professors in a stimulating environment. This extension of the boundaries of science using focused investigations caused the development of specialization among researchers of which the graduate school is a byproduct (McGee, 1971).

McGee (1971) states that "in graduate school . . . men are trained to be specialists in their respective fields" (p. 34). Thus, while the origin of the collegiate system of education was English, the origin of graduate education was German (Brubacher & Rudy, 1976). Note that the original design of the Johns Hopkins University did not include undergraduate schools (although ultimately when Johns Hopkins began in 1876, its enrollment did include 35 undergraduates along with 54 graduate students) (Brubacher & Rudy). The emphasis on graduate work at Johns Hopkins was so successful that "Clark, Chicago, Columbia, Harvard, and Wisconsin paid it the ultimate compliment of imitating it" (Brubacher & Rudy, p. 181). From its inception to the early twentieth century, Johns Hopkins' influence "on American higher education was out of all proportion to its

size, wealth, or age" (Brubacher & Rudy, p. 181) which directly led to the increased opportunities overall in the United States for graduate education (Brubacher & Rudy). Thus, *academic freedom* led to the proliferation of graduate schools where the *new* is encouraged to occur. But while academic freedom is necessary for creative research it is not sufficient; research investigations require funding.

ADVENT OF GOVERNMENTAL SUPPORT FOR RESEARCH

Before World War II, very little university research was being performed nor were very many scientists engaged in such work (Pusey, 1978). Pusey attributes this situation to the lack of both public and private financial support for research. However, a permanent change to this funding situation occurred with the beginnings of World War II.

Pusey (1978) writes:

> It has not been widely recognized, but the great development of academic research, which has played such a large part in enabling institutions of higher education to extend their reach and to grow in strength, seems to have followed from a decision recommended to President Roosevelt by Vannevar Bush in June 1940. (p. 66)

Because of the apparently inevitable confrontation with the Axis Power, Roosevelt queried Bush, the president of the Carnegie Institute in Washington, as to how science could best be organized for its use in national defense. Bush immediately organized the National Defense Committee and recommended, along with committee support, that the federal government make no attempt to organize its own research organizations but rather invest its financial resources into existing non-governmental institutions which include the universities (Pusey). This financial support would utilize the contract mechanism to accomplish the necessary research at these locations (Pusey).

Because the adoption of Bush's recommendations was so successful in the war effort, he was again asked by the president to comment on the future role of research. Bush stated in 1945 that "basic research, performed as an intellectual quest without thought of practical ends, [is the mechanism] that provides science's capital . . ." (Pusey, 1978, p. 70). Bush also asserted that colleges, universities, and other permanently funded organizations are the preferable locations for conducting basic research (Pusey).

Pusey (1978) indicates that following the war, numerous federal agencies did indeed turn to colleges and universities to conduct government-sponsored research resulting in a growth of graduate studies and a reduction in the amount of time a professor conducting research was expected to teach. The funding increased to a level where in recent years three-fourths of the available research funds in universities originated in various federal agencies (Pusey).

CONCLUDING REMARKS

Thus, the reduced emphasis on teaching undergraduates is the direct result of an enhanced emphasis on performing research. This enhancement is founded on German ideology and fiscal availability. But while undergraduate education has suffered, graduate education has benefited. The university professor, having both finite time and energy, might reasonably prioritize research over teaching due to the greater importance of the former on his professional future. Therefore, the real conflict results not from research being more important than teaching but from research being more important than teaching *to the professor*. A result of his academic freedom is that he is allowed to decide where to focus his efforts.

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